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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LE, LANA N	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/665,795	PATEL, VIPUL M.	
	Examiner	Art Unit	
	Lana N. Le	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,8,10-13 and 15-18* is/are rejected.

7)☒ Claim(s) *6,9 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 4, 5, 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Hipp (US 5,519,889).

Regarding claim 1, Hipp discloses a method for suppressing interference in a motor vehicle radio (14) from the operating frequency or the harmonics of the operating frequency of a source of time varying signal (20) in response to tuning the radio to a selected frequency (col 2, lines 3-14), the method comprising the steps of:

communicating the selected frequency (selected AM reception) with the source of time varying signal (20) (col 2, lines 6-14);

comparing (via controller 34 through feedback of output voltage from 44) the selected frequency to the operating frequency and to the harmonics of that operating frequency (col 2, lines 33-39; lines 60-67); and

adjusting (via 38, 34) the operating frequency if the operating frequency or any of the harmonics (i.e. the 31st harmonic) of the operating frequency fall within a

predetermined interference range of the selected frequency (col 2, lines 33-43; col 2, line 60 – col 3, line 18).

Regarding claim 4, Hipp discloses the method of claim 1 wherein the motor vehicle radio (14) comprises an AM radio and the step of communicating comprises the step of communicating a selected AM radio frequency (tuned AM reception) to the source of time varying signal (20) (col 2, lines 9-14; col 2, line 60 – col 3, line 6).

Regarding claim 5, Hipp discloses the method of claim 4 wherein the source of time varying signal comprises a switching power supply (20) and the step of communicating comprises the step of communicating the selected AM radio frequency (tuned AM radio reception) to the switching power supply (20) (col 2, lines 11-14; col 2, line 60 – col 3, line 6).

Regarding claim 7, Hipp discloses the method of claim 1 wherein the source of time varying signal comprises a switching power supply (20) and the step of communicating comprises the step of communicating a selected radio frequency (tuned radio reception) to the switching power supply (20) (col 2, lines 11-14; col 2, line 60 – col 3, line 6).

Regarding claim 8, Hipp discloses the method of claim 1 wherein the step of adjusting the operating frequency comprises incrementing or decrementing the operating frequency by an amount sufficient that the operating frequency and all of the harmonics of the operating frequency differ from the selected frequency by an amount greater than the predetermined interference range (operating frequency is controlled so that noise is below audible range; col 3, lines 1-18).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hipp (US 5,519,889) in view of Shimodaira et al (US 2003/0,036,415).

Regarding claim 2, Hipp discloses the method of claim 1 wherein the step of communicating comprises the step of communicating wirelessly the AM signal to the source of time varying signal. Hipp does not disclose sending a message from the radio to the source of time varying signal over a data bus. However, it is well known and notoriously old in the art to communicate via a wired data bus instead of wirelessly as taught by Shimodaira et al. Shimodaira et al disclose sending a message from the radio (47) to the source of time varying signal (Battery B) over a data bus (data bus connecting 49, 15, 14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to communicate via the wired data bus in order to alternatively connect the power supply to the radio to provide power source.

Regarding claim 3, Hipp and Shimodaira et al disclose the method of claim 2 wherein Hipp and Shimodaira et al do not disclose the step of communicating comprises the step of sending a message over a serial data bus. However, the

examiner takes official notice a serial data bus is a common type of wired data connection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to communicate the tuned AM reception via a serial data bus in order to send the message via a small local area network to interface different peripherals, i.e. the power supply to the radio receiver.

4. Claims 10-13, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hipp (US 5,519,889) in view of Shimodaira et al (US 2003/0,036,415) and further in view of Ogawa et al (US 6,147,938).

Regarding claim 10, Hipp discloses a method for suppressing interference in a motor vehicle AM radio (14) from frequencies generated by an electronic module comprising a source of time varying signal (20) in the motor vehicle (automobile vehicle), (fig. 1) the method operative in response to tuning the AM radio (14) to a selected frequency comprising the steps of:

comparing (via controller 34 through feedback of output voltage) the selected frequency to the operating frequency of the source of time varying signal (20) in the electronic module and to the harmonics of each of the operating frequencies (predetermined operating frequency; col 2, lines 33-39, lines 60-67);

adjusting (via 38, 34) the operating frequency of the source of time varying signal (20) in the electronic module for which the operating frequency or any harmonic (i.e. 31st harmonic) of the operating frequency is within a predetermined interference range of the selected frequency (precision timer 38 and controller 34 control the operating frequency

in which noise generated by power supply is adjusted below the audible range) col 2, lines 33-43; col 2, line 60 – col 3, line 18); and

leaving unadjusted the operating frequency of the source of time varying signal in any of the plurality of electronic modules for which the operating frequency and all harmonics of the operating frequency are different from the selected frequency by more than a predetermined interference range (if feedback of the noise in the power supply is determined to be below the audible range, controller 38, 34 will control the accuracy the operating frequency of the time varying signal accordingly; col 2, lines 33-43; col 3, lines 13-16).

Hipp does not disclose each of the plurality of electronic modules comprising an electronic control unit and a source of time varying signal coupled to the electronic control unit and configured to operate at an operating frequency and sending a message from the AM radio to each of the electronic control unit in the electronic module communicating the selected frequency. Shimodaira et al disclose an electronic module comprising an electronic control unit (10; fig. 1) and a source of time varying signal (from battery B) coupled to the electronic control unit and configured to operate at an operating frequency (para. 22); and sending a message from the radio (47) to each of the electronic control unit (ECU) 10 (via 49 and then 15) in the electronic module communicating the selected frequency (para. 35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a power source coupled to the ECU in order to receive voltage from the power source and to

communicate the signal of the radio to the ECU for processing as suggested by Shimodaira et al (para. 22).

Hipp and Shimodaira et al do not disclose a plurality of electronic modules. Ogawa discloses a plurality of electronic modules (20, 30, 40) installed in a motor vehicle (col 18, lines 66 – col 19, line 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of electronic modules in order to allow multiple modules (i.e. CD, radio) to be installed in the vehicle for the passengers of the vehicle to enjoy the music as suggested by Ogawa et al.

Regarding claim 11, Hipp, Shimodaira et al, and Ogawa et al disclose the method of claim 10 wherein Ogawa et al disclose the step of sending a message comprises sending a message from an electronic control unit (40; fig. 4) coupled to the AM radio (radio 11 in control panel 10) to each of the electronic control units (20, 30) in each of the plurality of electronic modules over a data bus (electric connectors 13, 45, 21a, 44, 31a) coupling each of the electronic control units (20, 30, 40) (col 13, lines 36-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to send a message from one ECU to the other ECUs via connection lines in order to allow the ECUs to communicate with each other.

Regarding claim 12, Hipp, Shimodaira et al, and Ogawa et al disclose the method of claim 10 wherein Ogawa et al disclose the step of sending a message comprises sending a message from an electronic control unit (40) coupled to the AM radio (11 via 13) to each of the electronic control units (20, 30) in each of the plurality of electronic modules over an electrical connector (electric connectors 13, 45, 21a, 44,

31a) coupling each of the electronic control units (20, 30, 40). Hipp, Shimodaira et al, and Ogawa et al do not disclose a serial data bus. However, the examiner takes official notice a serial data bus is a common type of wired data connection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to communicate the tuned AM reception via a serial data bus in order to send the message via a small local area network to interface different peripherals, i.e. the power supply to the radio receiver.

Regarding claim 13, Hipp, Shimodaira et al, and Ogawa et al disclose the method of claim 10 wherein Hipp discloses the step of comparing comprises the step of comparing (via controller 34 through feedback from 44) the selected frequency to the operating frequency of the source of time varying signal coupled to that electronic control unit and to the harmonics of that operating frequency (col 2, lines 33-39). Ogawa disclose an electronic control unit (ECU and power supply integrated therein) in each of the plurality of electronic modules (20-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the power supply of Hipp be integrated with an ECU in order to allow the ECU to compare the noise generated by the power supply.

Regarding claim 16, Hipp, Shimodaira et al, and Ogawa et al disclose the method of claim 10 wherein Hipp discloses the step of comparing comprises comparing (via 34 through feedback of output signal) the operating frequency of a source of time varying signal (20) coupled to and configured to power the AM radio and the harmonics generated by that source of time varying signal with the selected frequency (.

Regarding claim 17, Hipp discloses a method for suppressing interference in a motor vehicle AM radio (14; fig. 1) from frequencies generated by an electronic module (20) in the motor vehicle (automobile vehicle), the electronic module comprising a switching power supply (20) and configured to operate at an operating frequency, the method operative in response to tuning the AM radio (tuning to an AM reception via radio 14) to a selected frequency and comprising the steps of:

sending a message communicating the selected frequency (tuned AM reception) from an the AM radio (14) to the electronic module (20);

comparing (via 34 through feedback from 44) in each of the plurality of electronic modules the selected frequency (tuned AM reception) to the operating frequency of the switching power supply in that electronic module (col 2, lines 33-39);

adjusting (via 38, 34) the operating frequency of the switching power supply in the electronic module for which the operating frequency or any harmonic of the operating frequency is within a predetermined interference range of the selected frequency (precision timer 38 and controller 34 control the operating frequency in which noise generated by power supply is adjusted below the audible range) col 2, lines 33-43; col 2, line 60 – col 3, line 18).

Hipp does not disclose a plurality of electronic modules comprising an electronic control unit and a source of time varying signal coupled to the electronic control unit and configured to operate at an operating frequency and sending a message from the AM radio to each of the electronic control unit in the electronic module communicating the selected frequency. Shimodaira et al disclose an electronic module comprising an

electronic control unit (10; fig. 1) and a source of time varying signal (from battery B) coupled to the electronic control unit and configured to operate at an operating frequency (para. 22); and sending a message from a radio (47) to each of the electronic control unit (ECU) 10 (via 49 and then 15) in the electronic module communicating the selected frequency (para. 35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a power source coupled to the ECU in order to receive voltage from the power source and to communicate the signal of the radio to the ECU for processing as suggested by Shimodaira et al (para. 22).

Hipp and Shimodaira et al do not disclose a plurality of electronic modules and sending a message communicating the selected frequency from an electronic control unit coupled to the AM radio to the electronic control units in each of the plurality of electronic modules. Ogawa et al disclose a plurality of electronic modules (20, 30, 40) installed in a motor vehicle (col 18, lines 66 – col 19, line 9), and sending a message communicating the selected frequency from an electronic control unit (40) coupled to the AM radio (radio 11 of control panel 10) to the electronic control units (20, 30) in each of the plurality of electronic modules (col 11, lines 51-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of electronic modules and sending messages between the ECUs in order to allow multiple modules (i.e. CD, radio) to be installed in the vehicle for the passengers of the vehicle to enjoy the music and to allow the ECUs to communicate to each other as suggested by Ogawa et al.

Regarding claim 18, Hipp, Shimodaira et al, and Ogawa et al disclose the method of claim 17, wherein Hipp discloses the step of adjusting comprises the step of adjusting (via 38, 34) the operating frequency by an amount sufficient to insure that the operating frequency and any harmonic thereof differ from the selected frequency by an amount greater than the predetermined interference range (operating frequency is controlled so that noise is below audible range; col 3, lines 1-18).

Response to Arguments

5. Applicant's arguments filed 6/20/06 have been fully considered but they are not persuasive.

Regarding claim 1, applicant argues that the cited reference, Hipp, does not teach the power supply changing its frequency in response to tuning a radio to selected frequencies. The examiner respectfully disagrees. However, the controller and the precision timer 38 changes the operating frequency at a variable pulse width based on the feedback of the voltage output and is therefore not predetermined, and it changes the frequency in order to prevent interference with reception of AM radio signal in the nearby radio receiver (col 2, lines 27-38; col 1, lines 40-42; col 3, lines 1-18 wherein RF noise generated by the power supply is demodulated below the audible range by using crystal 40 in precision timer 38 so that it does not interfere with AM reception), and therefore reads on the "changing its frequency in response to tuning a radio to selected frequencies". Regarding claim 10, applicant again argues that the cited reference does

not teach the frequency of a source of time varying signal responds to a selected frequency of a radio. However, the source of time varying signal is the precision timer 38 controlling the power supply to not interfere with the received AM radio signals. Therefore, the rejection filed 4/606 stands rejected as set forth in the previous office action.

Allowable Subject Matter

6. Claims 6, 9, 14 are objected to as being dependent on a rejected base claim but would be allowable if rewritten in indendent form including all limitations of the base claim and any intervening claim.

Regarding claim 6, Hipp discloses the method of claim 5 wherein Hipp and the cited prior art fail to disclose the step of comparing comprises the step of determining whether the operating frequency or any of the harmonics of the operating frequency are within about plus or minus 5 kHz of the selected frequency.

Regarding claim 9, Hipp discloses method of claim 8 wherein Hipp and the cited prior art fail to disclose the method of claim 8 wherein the step of adjusting comprises the step of incrementing or decrementing the operating frequency of by about 3 kHz.

Regarding claim 14, Hipp discloses the method of claim 10 wherein the step of adjusting comprises the step of incrementing or decrementing the operating frequency of any of the sources of time varying signal in any of the plurality of electronic modules by about 3 kHz.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana N. Le whose telephone number is (571) 272-7891. The examiner can normally be reached on M-F 9:30-18:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lana Le

8-29-06

LANA LE
PRIMARY EXAMINER